



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/01336

January 13, 2003

Mr. Dallas J. Emch
Forest Supervisor
U.S. Forest Service
Willamette National Forest
211 East 7th Avenue
P.O. Box 10607
Eugene, OR 97440-2607

Re: Endangered Species Act Formal Section 7 Consultation on Salmon Creek Levee Repair Project, Willamette National Forest, Salmon Creek, Middle Fork Willamette River, Lane County, Oregon.

Dear Mr. Emch:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Salmon Creek Levee Repair Project. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Upper Willamette River chinook salmon (*Onchorynchus tshawytscha*). As required by section 7 of the ESA, NOAA Fisheries included reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are reasonable and appropriate to minimize the impact of incidental take associated with this action.

The proposed Salmon Creek Levee Repair project is located upstream from Dexter Dam on a tributary to the Middle Fork of the Willamette River. Streams upstream of Dexter Dam are not designated as Essential Fish Habitat (EFH) for chinook salmon (PFMC 1999). Because the effects of the proposed action will not extend below Dexter Dam, the proposed project will have no effect on currently designated chinook salmon EFH.

Please direct any questions regarding this consultation to Ron Lindland of my staff in the Oregon Habitat Branch at 503.231.2315.

Sincerely,

f.1 

D. Robert Lohn
Regional Administrator

cc: Brad Goehring, USFWS
Wade Sims, WNF



Endangered Species Act - Section 7 Consultation


Biological Opinion

Salmon Creek Levee Repair Project, Willamette National Forest
Salmon Creek, Middle Fork Willamette River
Lane County, Oregon

Agency: U.S. Forest Service

Consultation
Conducted By: NOAA Fisheries,
Northwest Region

Date Issued: January 13, 2003

Issued By: 

D. Robert Lohn
Regional Administrator

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1. BIOLOGICAL OPINION

1.1 Background

On November 18, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a November 12, 2002, letter and accompanying biological assessment (BA) from the Willamette National Forest (WNF) requesting formal consultation regarding the potential effects of the proposed Salmon Creek Levee Repair Project on Upper Willamette River (UWR) chinook salmon (*Oncorhynchus tshawytscha*). In the BA, the WNF determined that the proposed action is “likely to adversely affect” (LAA) UWR chinook salmon. The project will be located on Salmon Creek, approximately 0.75 miles upstream from its confluence with the Middle Fork Willamette River, and within the city limits of Oakridge, Oregon. The project is located on private land, but the project will be funded through Title II of the Secure Rural Schools and Community Self-Determination Act of 2000. The Forest Service currently manages these funds and, upon completion of consultation, the District Ranger for the Middle Fork Ranger District, will decide whether to release these funds allocated for levee repair to the City of Oakridge. Because the WNF is managing and allocating the funds for this project, they are designated as the lead agency for consultation under section 7 of the Endangered Species Act (ESA).

The Salmon Creek Levee (SCL) is a flood control structure built by the Army Corps of Engineers (COE) in 1959. The SCL protects private residences, commercial buildings, the City of Oakridge well field, and three bridges. During the floods of 1996, five portions of the levee totaling approximately 2,050 lineal feet were damaged. Damage ranged from partial to total removal of sections of the levee, and erosion of adjacent land. According to the BA, an estimated 25,000 cubic yards of soil washed into Salmon Creek as a result of the levee damage. Emergency repairs to the levee during and after the flood were accomplished using heavy equipment to place chunks of concrete, asphalt, and other debris to temporarily repair the damage.

NOAA Fisheries listed UWR chinook salmon as threatened under the ESA on March 24, 1999 (64 FR 14308). NOAA Fisheries issued protective regulations for UWR chinook salmon under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of UWR chinook salmon

1.2 Proposed Action

The proposed action is the repair of five separate sites on the existing SCL within a 0.5 mile reach of Salmon Creek between River Mile (RM) 0.75 and 1.25. Three of the sites to be repaired (Sites 1, 4, and 5, totaling approximately 990 lineal feet of levee), are located on the north side of Salmon Creek; while two sites (Sites 2 and 3, totaling approximately 1,060 lineal feet), are on the south side of Salmon Creek. Construction activities at each site will involve using heavy equipment to excavate a toe trench approximately six feet below the existing bedload level in

the stream channel, place bedding material and embankment fill material, and facing each site with rock riprap. Class III or Class IV riprap material would be used along the face of the levee at each of the sites. Preliminary survey information at Site 3 indicates that the stream may have encroached on private property. At this time, negotiations with the private land owner have not occurred to determine whether an alignment shift of the levee is possible. If a shift in alignment does occur at Site 3, it will be less likely that the work will require rerouting and dewatering of the stream at that location. All other levee repair sites (Sites 1, 2, 4, and 5) will be at or near their original location, and will be restored to the original design dimensions and elevations. Table 1 summarizes the amount of excavation, fill, and riprap work at each site.

Table 1. Summary of Salmon Creek Levee Repair

| Site Number | Excavated Material (Cubic Yards) | Bedding/Fill Material (Cubic Yards) | Facing/Riprap (Cubic Yards) | Lineal Feet of Levee Repaired |
|--------------------|---|--|------------------------------------|--------------------------------------|
| 1 | 1,322 | 1,280 | 1,459 | 263 |
| 2 | 2,665 | 2,600 | 2,964 | 530 |
| 3 | 2,665 | 2,600 | 2,964 | 530 |
| 4 | 1,715 | 1,673 | 1,907 | 337 |
| 5 | 1,963 | 1,915 | 2,183 | 390 |
| Total | 10,320 | 10,068 | 11,477 | 2,050 |

The main goals of the SCL repair project, as stated in the BA, are: (1) The protection of property and improvements; (2) restoration of the levee to a condition which allows re-entry into the U.S. Army Corps of Engineers Levee Rehabilitation and Inspection Program which could create a funding source for future repairs and habitat enhancement; and (3) to increase the recreation potential of the area through the development of a trail link between isolated legs of the Forest Service trail system. The addition of instream structures (large wood and boulders) in the project area is expected to enhance spawning and rearing habitat for UWR chinook salmon in Salmon Creek.

A total of eight instream habitat enhancement structures will be placed at selected locations within the project area on Salmon Creek. The structures will likely consist of V-shaped configurations using two or three logs per structure. The landward end of each structure will be tied into the embankment or other substrate by burying or using large boulders to anchor the logs. The intent of these structures is to reduce water velocity downstream of the structures, which in turn should result in an accumulation point for finer gravels where salmonids will spawn. Once levee repairs are completed, an interdisciplinary group will evaluate the new channel configuration, and determine the most practical location for each structure.

In-water work will be involved in excavating the toe trench, placing the bedding/fill material, placing the facing/riprap material, and installing the instream structures. All in-water work will occur between July 1 and August 15, the Oregon Department of Fish and Wildlife (ODFW) preferred in-water work period for Salmon Creek. Heavy equipment used to perform these activities will operate from the streambank (outside the water) to the maximum extent possible.

Dewatering of the toe of the levee slope at the five repair sites will be accomplished by stream diversion whenever possible. Depending on the channel configuration at the time of construction (between July 1 and August 15), the total dewatered length of stream could range from 2,050 to 3,000 feet. The braided nature of the Salmon Creek stream channel during low flows in the project stream reach will make it easier to dewater and isolate the work sites. Several methods of stream diversion and dewatering will be considered (*e.g.* inflatable bags, sandbags, sheet piling), and the most appropriate method used at each site. Once the water is diverted away from a site, additional dewatering of the site (if necessary) will be accomplished using pumps with appropriately screened intakes. Fish salvage at dewatered sites will be overseen by a competent fisheries biologist. Salvaged fish will be relocated to adjacent braids of the stream channel or other suitable areas within the stream.

According to the BA, the design and administration of work activities for this project will be closely patterned after terms and conditions for construction as stated in NOAA Fisheries' Programmatic Biological Opinion on Standard Local Operating Procedures for Endangered Species (SLOPES) for Certain Activities Requiring Department of the Army Permits in Oregon and the North Shore of the Columbia River, issued on June 14, 2002.

In order to comply with the COE's "Interim Guidelines for Selective Vegetation Maintenance on Flood Control Levees", some vegetation removal will be necessary on the landward and upper riverward sides of the levee (20-foot slope distance down from the levee shoulder). Vegetation that occurs outside of the 20-foot slope distance from the levee shoulder (*e.g.* from the 20-foot slope line to the water edge) will not necessarily be removed. This vegetation is mostly woody shrubs, blackberries, and other small vegetation, but will include a minimal number of cottonwood trees greater than 3 inches in diameter. The levee is currently, and has been over the years, relatively devoid of vegetation that could provide shade for the stream channel. According to the BA, the entire area along the levee was devoid of vegetation after the 1996 flood.

1.3 Biological Information

The listing status and biological information for UWR chinook salmon is provided in Myers *et al.* (1998).

The lower two miles of Salmon Creek provide spawning, rearing, and migratory habitat for both adult and juvenile life stages of UWR chinook salmon. A water diversion structure, which provides water for operation of ODFW's Salmon Creek Hatchery, is located at RM 2.0 on Salmon Creek, and is a total barrier to upstream migration by UWR chinook salmon. Adult

UWR chinook salmon that spawn in Salmon Creek are strays from an ODFW trap-and-haul operation. Currently, adult chinook salmon are captured at Dexter Dam, transported by truck, and released upstream from Hills Creek Dam. Hills Creek Dam is located on the Middle Fork Willamette River approximately three miles upstream from the Salmon Creek confluence. Offspring of these transported adults pass downstream through Hills Creek Dam, with some juveniles spending a portion of their lives rearing in lower Salmon Creek. In 2002, approximately 500 adult chinook salmon trapped at Dexter Dam were transported and released into the Middle Fork of the Willamette at Black Canyon Campground, which is approximately seven miles downstream from the Salmon Creek confluence. According to the BA, within ten days of their release at Black Canyon Campground, at least 200 of these adult chinook had migrated into lower Salmon Creek. Juvenile UWR chinook salmon rear in the lower two miles of Salmon Creek year-round and are likely to be present during completion of the project work.

Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitats for the species are substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. The essential features that the proposed project may affect are safe passage conditions, substrate, water quality, and riparian vegetation resulting from project activities.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy and destruction or adverse modification of critical habitat are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations combined with the Habitat Approach (NMFS 1999): (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species and whether the action is consistent with the available recovery strategy; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors is likely to appreciably reduce the likelihood of species survival in the wild or destroy or adversely modify critical habitat. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with information considered in its decision to list UWR

chinook salmon for ESA protection, then considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for UWR chinook salmon to survive and recover to naturally-reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. UWR chinook salmon survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NOAA Fisheries defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a “habitat approach” to its analysis (NMFS 1999). The current status of UWR chinook salmon, based upon their risk of extinction, has not significantly improved since the species were listed.

1.4.2 Environmental Baseline

In step 2 of NOAA Fisheries’ analysis, we evaluate the relevance of the environmental baseline in the action area to the species’ current status. The environmental baseline is an analysis of the effects of past and ongoing human-caused and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area includes, “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR 402.02). The action area for this consultation, therefore, includes the streambed and streambank of Salmon Creek from the levee repair site furthest upstream (Site 1 near RM 1.25) downstream to its confluence with the Middle Fork Willamette River and the Middle Fork Willamette River downstream to the extent of visible short-term turbidity increases resulting from the project work.

The current population status and biological information for UWR chinook salmon is provided in Myers *et al.* (1998). In general, the current status of UWR chinook salmon populations is the result of several long-term, human-induced factors (*e.g.*, habitat degradation, water diversions, hydropower dams) that serve to exacerbate the adverse effects of natural environmental variability from such factors as drought, floods, and poor ocean conditions.

Environmental baseline conditions within the action area were evaluated for the subject action at the project level and watershed scales. This evaluation was based on the “matrix of pathways and indicators (MPI) described in “Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale” (NMFS 1996). This method assesses the

current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

In the Lower Salmon Creek 6th field watershed, where the proposed levee repair project is located, 11 of the 18 habitat indicators in the MPI were rated as functioning “at risk.” These are: Water temperature, sediment, chemical contaminants/nutrients, physical barriers, substrate, large woody debris, pool frequency, pool quality, refugia, floodplain connectivity, and change in peak/base flow. Six of the 18 indicators were rated as not properly functioning (functioning at unacceptable risk). These are: Off-channel habitat, width/depth ratio, drainage network, road density, disturbance history, and riparian reserves. Only streambank condition was rated as properly functioning. The environmental baseline conditions for each habitat indicator in the MPI are described in the BA and incorporated herein by reference.

1.5 Analysis of Effects

In step 3 of the jeopardy analysis, NOAA Fisheries evaluates the effects of the proposed action on listed salmon.

1.5.1 Effects of Proposed Action

Activities implemented to repair the SCL will result in disturbance of stream substrate, release of sediment from the disturbed substrate, temporary increases in stream turbidity, and temporary relocation and dewatering of some stream sections at the five sites to be repaired. Habitat indicators which will be negatively affected in the short term by this project will be sediment/turbidity and substrate. Since heavy equipment will be working in or near the stream, there is potential for chemical contamination from fuel leaks or spills. Isolation and dewatering of work areas is expected to minimize sediment transport, turbidity increases, and the potential for any chemical contamination to enter the stream.

All in-water work will be completed during the ODFW preferred in-water work period for Salmon Creek, which is between July 1 and August 15, when adult UWR chinook salmon would not be present in the project area, and eggs or alevins would not be in stream gravels (ODFW 2000). However, since juvenile UWR chinook salmon rear in Salmon Creek year-round, some may be present in the project area even during that time period. Disturbance of stream substrate and the presence of heavy equipment in the stream channel will directly affect juvenile UWR chinook salmon that remain in the project area. The in-water work will result in disturbance of stream substrate and a temporary increase in stream turbidity. The temporary increase in stream turbidity could result in temporarily reduced feeding efficiency for juvenile UWR chinook salmon. Placement of materials to divert water away from and dewater the work sites will result in harassment and possible mortality of juvenile UWR chinook salmon. Even though the work sites will be dewatered where necessary, there is also the possibility that the heavy equipment used to dig the toe trench, remove concrete and other debris placed for emergency repairs during and after the 1996 flood, place riprap, and place instream structures could kill or injure juvenile UWR chinook salmon while performing the work. Direct mortality is expected to be minimal,

because juvenile fish will likely avoid the equipment and can move freely upstream or downstream from the project sites.

At locations where the stream is temporarily diverted around the work site, juvenile UWR chinook salmon could become stranded in the dewatered areas. During times when areas are dewatered, a fisheries biologist will be present to supervise and assist in fish salvage operations. If juvenile UWR chinook salmon are stranded by the temporary diversion of Salmon Creek around work sites, they would be netted by fisheries personnel and returned to the stream upstream from the work site.

Repair of the levee at the five flood-damaged sites is expected to stabilize streambanks resulting in long-term restoration of sediment/turbidity and substrate habitat elements. According to the BA, the damaged levee sites are currently a chronic source of sediment delivery to Salmon Creek. Sediment that enters the stream channel during levee repairs will be minimal in comparison to the potential load of sediment that could be delivered to Salmon Creek and the Middle Fork of the Willamette River if repairs are not completed in a timely manner.

Addition of the instream structures (*e.g.* logs and boulders) should improve the large wood and pool frequency/quality habitat indicators at the site level. The large woody material and pool frequency/quality habitat parameters for Salmon Creek are both rated as not properly functioning.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.” This is step 4 in NOAA Fisheries’ analysis process. The Lower Salmon Creek 6th field watershed includes urban development, industry, and residential use associated with the city of Oakridge, Oregon. The city relies on wells near the mouth of Salmon Creek as its primary municipal water supply, however, surface water is withdrawn from Salmon Creek as a secondary municipal water supply. Highway 58, a major east-west rout through the Cascade Mountains crosses Salmon Creek near its mouth. An abandoned lumber mill site near the project area is being transformed into the Oakridge Industrial Park, and may someday become a large industrial complex. At this time, the sole occupant of the industrial park is a telecommunications sub-station that has minimal activity. The operation of the ODFW Willamette Fish Hatchery relies on water diverted from Salmon Creek near RM 2.0. According to the BA, it is expected that development and land use within and adjacent to the project area by the city, state, and private property owners will continue in the future. It is also expected that activities on these lands will comply with county, state, and Federal laws and regulations.

1.6 Conclusion

The final step in NOAA Fisheries' approach to determine jeopardy is to determine whether the proposed action is likely to appreciably reduce the likelihood of species survival or recovery in the wild. NOAA Fisheries has determined that, when the effects of the proposed Salmon Creek Levee Repair Project addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, it is not likely to jeopardize the continued existence of UWR chinook salmon. NOAA Fisheries believes that the proposed actions would cause a short-term increase in stream turbidity in Salmon Creek and, possibly in the mainstem Middle Fork Willamette River immediately downstream from the Salmon Creek confluence. Although direct mortality of juvenile UWR chinook salmon from this project could occur during in-water work in Salmon Creek, the level of potential mortality would be low and would not result in jeopardy.

These conclusions are based on the following considerations: (1) All in-water work will be completed within the ODFW preferred in-water work period between July 1 and August 15 when adult UWR chinook salmon are not present and eggs or pre-emergent fry are not present in Salmon Creek; (2) in-water work areas at the levee repair sites will be isolated from the stream channel as appropriate, work areas de-watered, and any fish stranded by the de-watering captured and returned to Salmon Creek; (3) a fisheries biologist will participate in or supervise the capture, removal, and release of any fish from the areas to be isolated during in-water work, and release; (4) downstream movement of sediment from the levee repair sites will be minimized by isolation and de-watering of the in-water work sites; (5) streambank areas disturbed by project activities that are not specifically excluded from being vegetated by the requirements of the COE's "Interim Guidelines for Selective Vegetation Maintenance on Flood Control Levees" will be mulched and planted with native vegetation specific to the project vicinity; and (6) NOAA Fisheries expects that the net effect of the proposed action will be to maintain or help restore properly functioning habitat conditions in the project area of Salmon Creek.

1.7 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NOAA Fisheries has no additional conservation recommendations regarding the action addressed in this Opinion.

1.8 Reinitiation of Consultation

Reinitiation of consultation is required if: (1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion;

(2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of the incidental take statement.

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the proposed action is reasonably certain to result in incidental take of UWR chinook salmon because of detrimental effects from increased sediment and pollutant levels (non-lethal), riparian habitat disturbance (non-lethal), and the disturbance or possibly killing of juvenile fish during in-water work (non-lethal and lethal).

Effects of actions such as minor sedimentation and minor riparian disturbance are unquantifiable in the short term and are not expected to be measurable as long-term harm to habitat features or by long-term harm to salmonid behavior or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the construction actions covered by this Opinion, best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate the specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the habitat altering actions covered by the Opinion. The extent of the take includes the aquatic and associated riparian habitats affected by repair of the SCL.

Unlike general habitat effects, the effects of the levee repair (excavation of a toe trench, fill, and riprap placement at each of the five sites; and installation of instream habitat structures) and dewatering in Salmon Creek could result in incidental lethal take of juvenile UWR chinook salmon. The incidental lethal take could be caused by contact with heavy equipment used to excavate and place levee material, contact with the material itself, stranding in the temporarily

dewatered sections of Salmon Creek, or delayed mortality resulting from netting and transfer of fish from the dewatered stream sections. The extent of take is limited to UWR chinook salmon in Salmon Creek.

2.2 Effect of the Take

In this Opinion, NOAA Fisheries has determined that the level of anticipated take is not likely to result in jeopardy to UWR chinook salmon when the reasonable and prudent measures are implemented.

2.3 Reasonable and Prudent Measures

NOAA Fisheries believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of UWR chinook salmon resulting from the action covered by this Opinion. The WNF shall:

1. Minimize the likelihood of incidental take resulting from in-water work required to complete the project addressed in this Opinion.
2. Minimize the likelihood of incidental take and impacts on anadromous salmonid habitat resulting from damage to riparian vegetation, streambank erosion, or water pollution associated with this project.
3. Minimize the likelihood of incidental take from aquatic habitat projects by applying the results of watershed analysis and by applying project design criteria to avoid or minimize disturbance of aquatic systems.
4. Monitor the effectiveness of the conservation measures in minimizing take of UWR chinook salmon.

2.4 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the WNF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. To implement reasonable and prudent measure #1, (in-water work), the WNF shall ensure that:
 - a. All work within the active channel that could potentially contribute sediment or toxicants to the stream will be completed within the ODFW approved in-water

- work period for Salmon Creek of July 1 to August 15¹.
- b. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved in writing by and coordinated with biologists from NOAA Fisheries prior to implementation.
 - c. Operate equipment used to perform the levee repair work in Salmon Creek from existing roads or the streambank (equipment will not enter the active stream) to the greatest extent possible.
 - d. Minimize the time period during which those portions of Salmon Creek where levee repairs will occur are dewatered.
 - e. Isolate in-water work areas, where appropriate, from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials.
 - f. Capture and release fish from the isolated areas using trapping, seining, electrofishing, or other methods as appropriate to minimize risk of injury to ESA-listed fish.
 - i. A fisheries biologist experienced in work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.
 - ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines².
 - iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during capture and transfer procedures to prevent the added stress of out-of-water handling.
 - iv. Captured fish must be released as near as possible to capture sites.
 - v. ESA-listed fish may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.
 - vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.
 - vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.
2. To implement reasonable and prudent measure #2, (riparian vegetation, streambank erosion, and water pollution), the WNF shall ensure that:
- a. Disturbance of existing riparian vegetation, except in areas where its removal is required to meet the COE's "Interim Guidelines for Selective Vegetation Maintenance on Flood Control Levees" is minimized at the project site.

¹ Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish) (http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

²National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (<http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf>).

- b. All areas disturbed during activities associated with this project, that are not specifically excluded from being vegetated by the requirements of the COE's "Interim Guidelines for Selective Vegetation Maintenance on Flood Control Levees", will be planted with native vegetation specific to the project vicinity. Plantings will achieve an 80% survival success after three years.
 - c. Cottonwood and/or conifer seedlings (as appropriate) will be planted in selected areas of the overbuild portion of the SCL where the requirements of the COE's "Interim Guidelines for Selective Vegetation Maintenance on Flood Control Levees" will allow.
 - d. Equipment used in the project will be cleaned of external oil and grease and inspected for fluid leaks before operating below the bankfull elevation of the stream.
 - e. Equipment staging, cleaning, maintenance, refueling, and fuel storage must take place in an equipment staging area at least 150 feet from any stream, water body, or wetland.
3. To implement reasonable and prudent measure #3, (aquatic habitat project), the WNF shall ensure that:
- a. Knowledgeable and trained personnel (*e.g.* professional fisheries biologist, hydrologist, and engineer) are involved in the design and implementation of all instream habitat enhancement projects.
 - b. All work within the active channel that could potentially contribute sediment or toxicants to the stream will be completed within the ODFW approved in-water work period for Salmon Creek of July 1 to August 15.
 - c. Extensions of the in-water work period must be approved in writing by and coordinated with biologists from NOAA Fisheries prior to implementation.
 - d. Heavy equipment used to place instream structures will be cleaned and will be free of leaks before used within the stream channel
 - e. Time in which heavy equipment is in the stream channel will be minimized.
 - f. Equipment will not be stored in stream channels when not in use to avoid effects of vandals, accidents, or natural disasters.
 - g. Equipment staging, cleaning, maintenance, refueling, and fuel storage must take place in an equipment staging area at least 150 feet from any stream, water body, or wetland.
 - h. Use whole trees and/or tree pieces with attached roots (if available) of sufficient size (*i.e.* some are key pieces) and aggregated in a manner to most closely mimic natural accumulations of large woody debris for the particular stream type.
 - i. Use cable sparingly in project design and only when conditions do not exist to anchor large wood naturally between riparian trees or where stream power is great enough that wood meeting size criteria cannot be stabilized through natural anchoring.
 - j. Favor use of bioengineering techniques.

4. To implement reasonable and prudent measure #4, (monitoring), the WNF shall ensure that:
 - a. Within 30 days of completing the project, the WNF will submit a monitoring report to NOAA Fisheries describing the WNF's success meeting these terms and conditions. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name
 - (2) Starting and ending dates of work completed for this project, and;
 - (3) Name and address of the construction supervisor.
 - ii. A narrative assessment of the project's effects on natural stream function.
 - iii. Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
 - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
 - b. Monitoring reports will be submitted to:

NOAA Fisheries
Oregon Habitat Branch
Attn: 2002/01336
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

This Opinion also serves as consultation on essential fish habitat for coho salmon (*O. kisutch*) and chinook salmon pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

3. LITERATURE CITED

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